

Dry weather prevailed from the 17th to the 29th, when general showers occurred. Timely forecasts of the showers were issued.—*I. W. Chne, District Forecaster.*

CHICAGO FORECAST DISTRICT.

One of the most severe storms of the month reached the middle Missouri Valley on the morning of the 12th. The wind blew with considerable force on Lakes Michigan and Superior on that day, but by the morning of the 13th the storm had lost energy. Storm warnings were ordered for the upper Lakes on the morning of the 12th. On the morning of the 23d a storm from the British Northwest Territory appeared over Lake Superior. Storm warnings were ordered in the morning, but the storm lost force during the night of the 23d. A storm that had moved eastward over the northern tier of States passed over the upper Lake region on the morning of the 26th. Southwest storm warnings were ordered on the morning of the 25th and changed to northwest on the morning of the 26th. The storm caused high winds in the upper Lake region.

Frost warnings were ordered on several days, and they were generally verified. Although the frosts were quite severe, it is thought that in many parts of the corn belt no damage was caused. The cranberry growers of Wisconsin received warnings in advance, and where a water supply was available for flooding no injury resulted.—*H. J. Cor, Professor and District Forecaster.*

DENVER FORECAST DISTRICT.

Warnings were issued on the morning of the 12th for the first cold wave of the season, with freezing temperatures in the high districts of western Colorado and southern Utah. The light and heavy frosts of the month were covered by forecasts and warnings that were widely distributed.—*F. H. Brandenburg, District Forecaster.*

AREAS OF HIGH AND LOW PRESSURE.

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocity.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
High areas.										
I.....	3, a. m.	53	122	9, a. m.	41	72	3,300	6.0	550	22.9
II.....	7, a. m.	41	124	11, p. m.	35	75	3,300	4.5	733	30.5
III.....	13, a. m.	51	114	12, p. m.	41	70	3,700	5.5	673	28.0
IV.....	14, a. m.	41	118	20, a. m.	45	64	4,400	7.0	628	26.2
V.....	22, a. m.	54	114	27, p. m.	46	60	4,300	6.0	717	29.9
VI.....	25, p. m.	47	123	29, p. m.	39	75	3,450	5.5	627	26.1
							2,875	4.0	719	30.0
Sums.....							25,325	38.5	4,647	193.6
Mean of 7 paths.....							3,618		664	27.7
Mean of 38.5 days.....									658	27.4
Low areas.										
I.....	4, p. m.	40	122	11, a. m.	48	54	4,000	6.5	615	25.6
II.....	6, p. m.	51	114	14, a. m.	48	54	2,850	4.5	633	26.4
III.....	10, a. m.	23	74	16, a. m.	33	82	1,275	4.0	319	13.3
IV.....	11, a. m.	39	109	14, a. m.	48	54	3,225	3.0	1,075	44.8
V.....	13, a. m.	26	65	16, a. m.	40	75	1,325	3.0	442	18.4
VI.....	14, p. m.	40	91	18, a. m.	50	64	1,900	3.5	543	22.6
	24, a. m.	51	120	29, a. m.	48	54	3,800	5.0	760	31.7
Sums.....							18,375	29.5	4,387	182.8
Mean of 7 paths.....							2,625		627	26.1
Mean of 29.5 days.....									623	26.0

For graphic presentation of the movements of these highs and lows see Charts I and II.—*George E. Hunt, Chief Clerk, Forecast Division.*

SAN FRANCISCO FORECAST DISTRICT.

In northern California very little rain fell. High wind velocities occurred at Point Reyes Light on the 12th and 13th and at coast points near San Francisco on the 23d. Reports from the Farallon Islands during the last half of the month were of great value to the shipping interests. The last decade of the month was marked by generally showery weather in southern California, and a marked disturbance over the Valley of the Colorado on the 27th was accompanied by showers in southern California that were forecast on the morning of the 27th.—*A. G. McAdie, Professor.*

PORTLAND, OREG., FORECAST DISTRICT.

No severe storms occurred. East of the Cascade Mountains light frosts were frequently reported during the last half of the month, and on the 30th generally in western Oregon. Heavy or killing frost was not reported except at a few exposed points. Warnings were issued in advance of the occurrence of each frost.—*E. A. Beals, District Forecaster.*

RIVERS AND FLOODS.

Nothing of special interest transpired in the various river and flood districts during September, except the freshets in the Ocmulgee and Oconee rivers, description of which follows by Mr. John R. Weeks, Official in Charge of the Weather Bureau office, at Macon, Ga.

From St. Paul to St. Louis the mean stages of the Mississippi ranged from 2 to 3 feet higher than the preceding month, while from St. Louis southward to New Orleans they were somewhat lower. The waters of the Missouri, Ohio, Cumberland, and Tennessee continued to decline slowly, and with few exceptions, the lowest gage readings were reported on or about the last day of the month.

As a result of the tropical rainstorm which remained nearly stationary over the east Gulf States from the 13th to the 16th, inclusive, the danger lines were approximated in the lower stretches of nearly all the Alabama, Georgia, and South Carolina streams, but were reached at only a few places on the Ocmulgee and Oconee rivers, where timely warnings prevented any damage, except such as was unavoidable.

FRESHETS IN THE OCMULGEE AND OCONEE RIVERS.

Rains occurred in the above river district for the twenty-four hours ending at 8 a. m., September 15, 1903, as follows: Macon, 2.31 inches; Covington, 3.80 inches; Monticello, 2.44 inches; Atlanta, 1.92 inches; Gainesville, 2.26 inches; Milledgeville, 1.54 inches; Waycross, 1.80 inches; Eastman, 2.40 inches; Griffin, 5.42 inches; Athens, 2.42 inches; Beech Hill (to 2 p. m.), 3.62 inches. A bulletin and warning was therefore issued at 10 a. m., containing the following forecast:

"Rains continue to-day. The river at Macon will reach, and may exceed, danger line to-night and Wednesday. The Oconee will have a moderate rise but not to danger line."

This was sent to over three hundred addresses and was given by telephone, bulletin, and the local press to local and country addresses. Further rains occurred during the twenty-four hours ending at 8 a. m. the next day as follows: Macon, 1.10 inches; Greensboro, 2.10 inches; Washington, 1.50 inches; Milledgeville, 2.04 inches; Dublin, 2.02 inches; Athens, 1.98 inches; Augusta, 1.28 inches. Another bulletin was therefore issued to Oconee River interests, containing the following:

"A moderate freshet is indicated for the Oconee River which will cover medium lowlands and pass Dublin the last of the week."

The freshet in the Ocmulgee passed Macon September 17, with a stage not quite at the danger line, but it exceeded the danger line slightly at Abbeville on the 23d. Some damage was done to crops on lowlands, but other interests were fully prepared and sustained no damage.

The freshet in the Oconee passed Dublin September 20. The banks are high at that point and it did not reach the danger line, but some lowlands were covered, the damage being slight and unavoidable. These freshets were not as high as they would otherwise have been from the amount of rainfall had it not been for the excessive dryness of the soil. On the whole they were beneficial, as the warnings enabled lumbermen, boatmen, and rice planters to prepare for the higher water and take advantage of it in their work.

The highest and lowest water, mean stage, and monthly